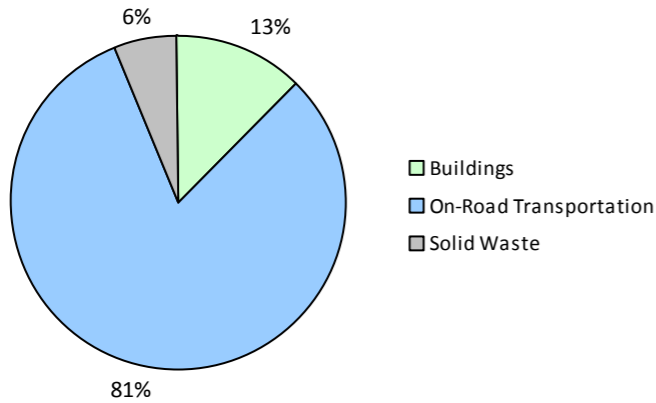


Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

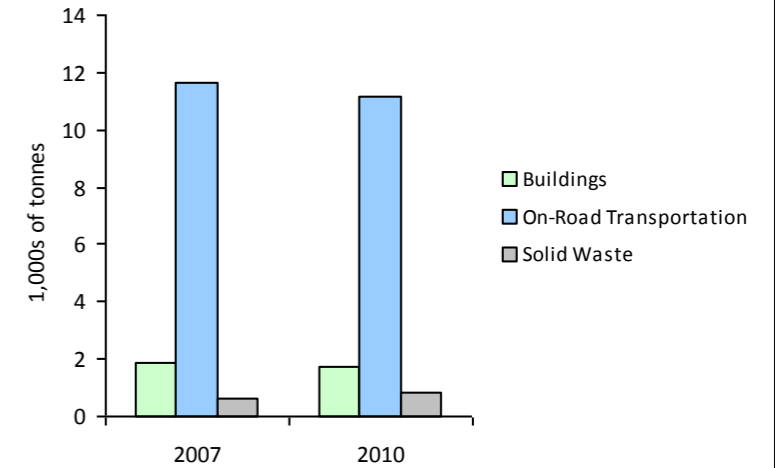
2010 GHG Emissions Sources (Total for this Community)



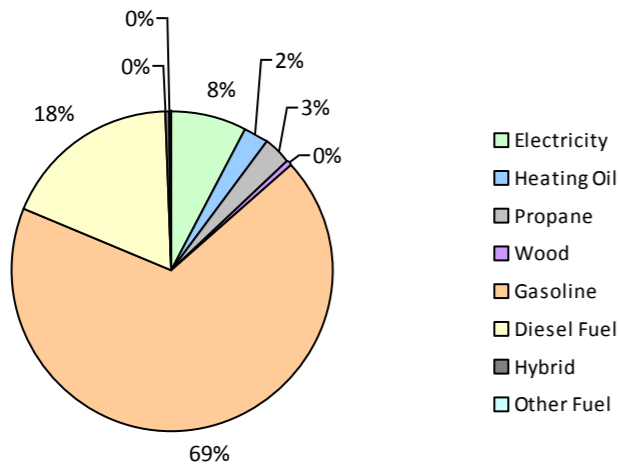
2010 GHG Emissions Sources (Total for BC)



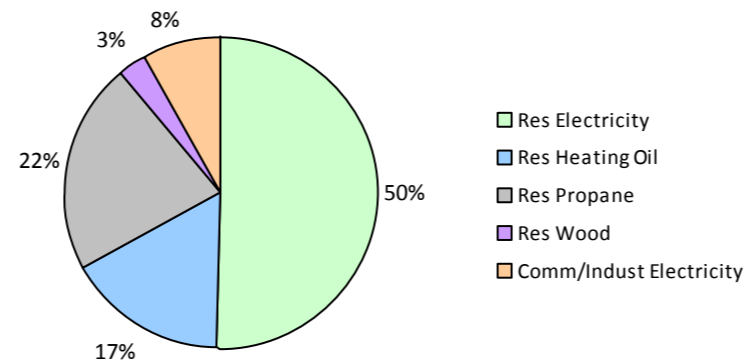
GHG Emissions Comparisons for this Community



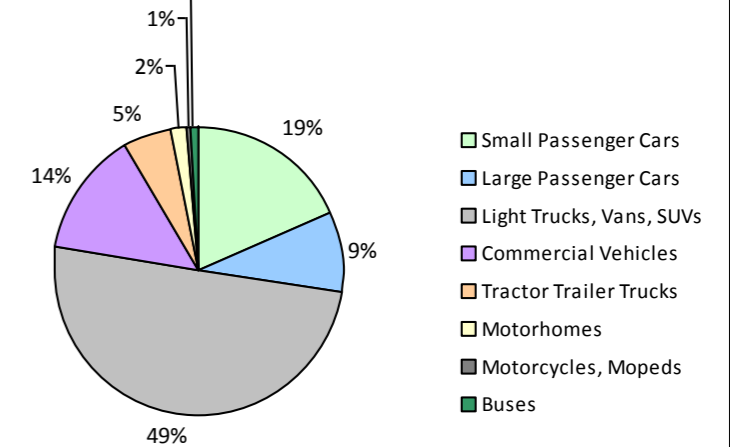
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



Bowen Island Municipality 2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Core Items

On-Road Transportation		2007					2010				
		Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO ₂ e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO ₂ e (t)
Small Passenger Cars	Hybrid			12,900	42	4			11,300	122	8
	Gasoline	751	902,280 L	12,600	31,580	2,149	722	862,938 L	12,500	30,203	1,943
	Diesel Fuel	40	44,365 L	17,000	1,699	121	46	46,758 L	15,400	1,790	124
	Other Fuel								14,600	78	4
Large Passenger Cars	Hybrid			15,600	137	9	10	6,979 L	13,000	244	16
	Gasoline	341	478,246 L	12,200	16,738	1,138	312	408,882 L	11,400	14,310	923
	Diesel Fuel			12,000	355	26	15	15,146 L	10,500	581	40
Light Trucks, Vans, SUVs	Hybrid			12,900	73	5			20,700	128	9
	Gasoline	1,111	2,242,293 L	14,500	78,480	5,379	1,204	2,314,036 L	13,800	80,992	5,268
	Diesel Fuel	60	136,176 L	13,300	5,216	371	52	111,584 L	13,000	4,274	295
	Other Fuel			12,100	462	28			11,800	201	12
Commercial Vehicles	Gasoline	76	200,032 L	15,800	7,002	469	72	163,007 L	13,600	5,704	365
	Diesel Fuel	100	389,829 L	20,300	14,930	1,048	125	466,680 L	19,600	17,873	1,219
	Other Fuel			10,600	199	11			12,700	174	11
Tractor Trailer Trucks	Gasoline			12,600	138	8			12,200	123	8
	Diesel Fuel	27	192,597 L	17,200	7,377	519	29	214,692 L	17,900	8,223	560
	Other Fuel			11,000	75	4					
Motorhomes	Gasoline	20	48,855 L	17,600	1,710	115	26	62,824 L	17,300	2,199	139
	Diesel Fuel			17,500	1,054	73			16,200	660	44
Motorcycles, Mopeds	Gasoline	74	19,557 L	6,000	684	46	102	27,795 L	6,100	973	62
Buses	Gasoline			30,600	473	32			25,000	545	34
	Diesel Fuel			39,500	1,077	76			35,100	1,076	73
Totals		2,600	4,654,230 L	13,731	169,501	11,631	2,715	4,654,230 L	13,219	170,473	11,157

Bowen Island Municipality 2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Residential	Wood	N/A	2,727 GJ	2,727	55	N/A	2,540 GJ	2,540	51
	Heating Oil	N/A	4,574 GJ	4,574	322	N/A	4,261 GJ	4,261	291
	Propane	N/A	6,767 GJ	6,767	413	N/A	6,303 GJ	6,303	385
	Electricity	1,744	36,586,908 kWh	131,713	915	1,804	35,108,433 kWh	126,390	878
Commercial/Small-Medium Industrial	Electricity	232	6,008,398 kWh	21,630	150	275	5,673,552 kWh	20,425	142
Totals		1,976		167,411	1,855	2,079		159,919	1,747

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Community Solid Waste	Solid Waste	0	2,260 t	N/A	604	0	1,758 t	N/A	834
Totals		0			604	0			834

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 3,522)			2010 (Population: 3,678)		
	Consumption	Energy (GJ)	CO2e (t)	Consumption	Energy (GJ)	CO2e (t)
Hybrid	0 L	252	18	6,979 L	494	33
Gasoline	3,891,263 L	136,805	9,336	3,839,482 L	135,049	8,742
Diesel Fuel	762,967 L	31,708	2,234	854,860 L	34,477	2,355
Other Fuel	0 L	736	43	0 L	453	27
Wood	2,727 GJ	2,727	55	2,540 GJ	2,540	51
Heating Oil	4,574 GJ	4,574	322	4,261 GJ	4,261	291
Propane	6,767 GJ	6,767	413	6,303 GJ	6,303	385
Electricity	42,595,306 kWh	153,343	1,065	40,781,985 kWh	146,815	1,020
Solid Waste	2,260 t	0	604	1,758 t	0	834
Grand Totals		336,912	14,090		330,392	13,738

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Supporting Indicators

No new supporting indicator data have been provided in the 2010 reports. Work is currently underway to produce a complete second round of data for the indicators below in the 2012 reports (available in 2014). In the interim, we are including the same supporting indicator data that was provided in the 2007 reports. Feedback is requested on all supporting indicators; please contact us directly at

Housing Type - Private dwellings by structural type

Housing type is important for reducing building-related GHG emissions and energy consumption. A trend toward fewer single family dwellings indicates an increase in residential density, which is known to reduce transportation-related GHG emissions.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Single Detached House	925	90	1,060	93	1,210	90
Semi-Detached House	0	0	15	1	5	0
Row House	25	2	15	1	20	1
Apartment, Duplex	35	3	15	1	40	3
Apartment, 5 storeys or higher	0	0	0	0	0	0
Apartment, under 5 storeys	30	3	15	1	55	4
Other Single Attached House	0	0	10	1	5	0
Movable Dwelling	10	1	5	0	10	1

Commute to Work - Employed labour force - by mode of commute

An increase in the number of people choosing to walk, cycle and use transit reduces GHG emissions. More compact, complete, connected communities should see an increase in the use of these transportation modes.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Car, Truck, Van as Driver	730	65	900	71	1,115	69
Car, Truck, Van as Passenger	125	11	85	7	110	7
Public Transit	145	13	185	15	215	13
Walked	70	6	55	4	130	8
Bicycle	10	1	10	1	15	1
Motorcycle	10	1	0	0	20	1
Taxicab	0	0	10	1	0	0
Other Method	40	4	15	1	15	1

Parks and Protected Greenspace

Parks and protected greenspaces are important for the protection and enhancement of community carbon sinks.

	2009	
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	407	8
Local Parks	259	5
Agricultural Land Reserve	182	4
Other land use	4,209	83
Total Parks and Protected Area	666	13
Total Land Area	5,057	100

* Total is net of Indian Reserves
 ** Quantity of parkland may be underestimated

Residential Density

Increasing residential densities is known to reduce vehicle use resulting in fewer transportation-related GHG emissions. There are many additional benefits from more compact development.

	2009	
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	407	8
Local Parks	259	5
Agricultural Land Reserve	182	4
Other land use	4,209	83
Total Parks and Protected Area	666	13
Total Land Area	5,057	100

* Net of Crown land, parks, Indian Reserves, water features, airports, ALR, waste disposal site

Commute Distance

Shorter commute distances generally reduce GHG emissions by increasing the likelihood of people walking, cycling or using transit. Commute distance is also indicative of the 'completeness' of a community from an employment perspective.

	2006	
	Units	%
Less than 5 km	370	32
5 to 9.9 km	80	7
25 km or more	210	18
15 to 24.9 km	445	38
10 to 14.9 km	60	5

Bowen Island Municipality
2010 Community Energy and Emissions Inventory
Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

This page
intentionally left
blank

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Supporting Indicators Under Consideration

Work is currently underway to produce a complete second round of supporting indicators for the 2012 reports (available in 2014). These reports will new data for the five supporting indicators included in the 2007 and 2010 Reports:

- **Housing Type:** Private dwellings by structural type
- **Commute to Work:** Employed labour force - by mode of commute
- **Commute Distance**
- **Residential Density**
- **Parks and Protected Greenspace**

And in addition, the 2012 reports we are working to be able to include:

- **Proximity to Transit**
- **Building Energy Intensity**
- **Building Floor Space**
- **Waste Diversion**

We are continuing to work towards reporting on even more supporting indicators in the future including:

- **Proximity to Services** (e.g. destinations such as grocery store, school, other retail etc.)
- **Transit Ridership**
- **Water Use**
- **Impervious Surface Cover:** % change in impervious surface cover
- **Tree Canopy Cover:** % change in tree canopy cover
- **District Energy:** # and energy output (e.g. buildings connected, energy consumed in GJ or kWh) of district energy systems by energy type e.g. renewable or non-renewable)
- **On-Site Renewable Energy:** # and energy output (in GJ or kWh) from households producing and/or consuming on-site renewable heat (e.g. biomass, solar thermal, geo-exchange) and/or electrical (e.g. solar photovoltaic, small wind, small scale hydro) energy
- **Energy Recovery** from waste energy (GJ or kWh) recovered from waste (e.g. from landfill gas, sewage treatment, industrial operations, farm)

Please give us feedback by contacting us directly at CEEIRPT@gov.bc.ca

Many local governments have been undertaking a significant amount of climate action in both the corporate and community-wide spheres, as demonstrated in both the public reports from the Climate Action Revenue Incentive Program (CARIP) <http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm>, and on the <http://toolkit.bc.ca> website. These two resources may be helpful to those who are interested in learning from other BC local governments. The toolkit also contains additional information and resources including decision-support/planning frameworks and tools for undertaking actions to reduce GHG emissions and energy consumption.

This is your local government's 2010 Community Energy and Emissions Inventory (CEEI) Report

What is a CEEI Report?

CEEI Reports are a result of a multi-agency effort to provide a province-wide solution to assist local governments in BC to track and report on community-wide energy consumption and greenhouse gas (GHG) emissions as well as supporting indicators every two years. CEEI Reports are one of the many resources available through the Climate Action Toolkit (<http://www.toolkit.bc.ca>), a web-based service provided through the ongoing collaboration between UBCM and the Province.

Why does my local government need a CEEI Report?

A community energy and GHG emissions inventory can be a valuable tool that helps local governments plan and implement GHG and energy management strategies, while at the same time strengthening broader sustainability planning at the local level. CEEI reports fulfill local governments' Climate Action Charter commitment to measure and report their community's GHG emissions profile, establish a base year inventory for local governments to consider as they develop targets, policies, and actions related to BC's Local Government Act requirements, fulfill Milestone One requirements for those local government members of the Federation of Canadian Municipalities' (FCM's) Partners in Climate Protection (PCP) program, as well as supporting local government efforts to monitor progress towards Regional Growth Strategy objectives.

A first in North America!

CEEI is a first in North America and a first step for BC communities. The 2010 CEEI Reports are based on best available province-wide data. The accuracy and detail of CEEI reports will continue to improve to meet increasing local and provincial government information needs. Improvements have been made from the original draft 2007 CEEI Reports posted in Spring 2009. These include estimates for residential heating oil, propane and wood use, breaking out small from large industrial buildings, including updated land-use change and new agricultural sectors as 'memo items'. Following the 2010 CEEI Reports, inventories will be generated every two years, and will continue to improve as government information needs, international protocols and new data sources emerge.

For More Information

The full list of all BC local government 2010 CEEI Reports, User Guide, Technical Methods and Guidance Document, and additional information on the Supporting Indicators are available at: <http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html> For guidance on target setting and community actions, go to <http://www.toolkit.bc.ca> and <http://www.cd.gov.bc.ca/lgd/greencommunities/targets.htm>

We Need Your Feedback

To continue to guide us on CEEI, please take the time to contact us directly at CEEIRPT@gov.bc.ca

Notice to the Reader

This CEEI Report uses information from a variety of sources to estimate GHG emissions. While the methodologies, assumptions and data used are intended to provide reasonable estimates of greenhouse gas emissions, the information presented in this report may not be appropriate for all purposes. The Province of BC and the data providers do not provide any warranty to the user or guarantee the accuracy or reliability of the data contained in this report. The user accepts responsibility for the ultimate use of such data. We need your help to make these reports better,